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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,393	07/12/2003	Nils Krahnstoever	AI-0014-JPO	5600
Rajeev Sharma Advanced Interfaces, Inc. Suite 104 403 South Allen Street State College, PA 16801			EXAMINER YUAN, KATHLEEN S	
			ART UNIT 2624	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/618,393	KRAHNSTOEVEY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kathleen S. Yuan	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 3/8/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The response received on 3/08/200 has been placed in the file and was considered by the examiner. An action on the merit follows.

#### ***Response to Amendment***

1. The amendments filed on 08 March 2007 have been fully considered. Response to these amendments is provided below.

#### **Summary of Arguments/Amendments and Examiner's Response:**

2. The applicant has cancelled all claims and added new claims. The new independent claims are similar to the cancelled independent claims with added limitations including "wherein the final target object location is given by a weighted mean of all location hypotheses of said 3D target location hypotheses for combining the measurements, and whereby the examples of said target object can comprise human appendage, human hand, and human head," and "whereby examples of imaging sensors can comprise color cameras and IEEE 1394 cameras."

3. Applicant's arguments with respect to the claim have been considered but are moot in view of the new ground(s) of rejection.

4. The following comments are regarding the pro se status of the application:

5. Applicant should submit an argument under the heading "Remarks" pointing out disagreements with the examiner's contentions. Applicant must also discuss the

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references applied against the claims, explaining how the claims avoid the references or distinguish from them.

6. The applicant has argued a few things about the claims that overcome the prior art. However, the applicant has provided extra arguments, which leads the examiner to provide a few comments. The examiner would like to remind the applicant that in order for an application to be allowable, the independent claim must be allowable. The dependent claims are then also allowable. If the applicant believes that the independent claim is allowable over the prior art by the necessitated amendment and is correct, it is not necessary to argue the dependent claims. For example, the applicant argues that "Random distribution of the hypotheses" is not in the prior art as well as "combination of spread out color..." If this is thought to be the allowable feature, it should be in the independent claim. Also, the examiner would like to remind the applicant that it is the examiner's responsibility to give the claims the broadest possible interpretation. In the remarks, the applicant argues many points that are provided in the specification. The examiner does not have to reject the specification, only the content of the claims, in its broadest interpretation. It is more effective to argue that a specific part of the claim is missing, not just the ideas that are represented in the claims. Also, some arguments, such as the reference not disclosing the same solution as the applicant, are not important as well. As long as the reference teaches what is in the claims, the reference is valid. The reference's specification can explain different reasons for doing what is claimed, but the fact that it does the same thing is enough.

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7. Also, the examiner would like to remind the applicant that the preamble to the claim is not given any patentable weight because it doesn't breath life or vitality into the claim.

8. The following is a standard paragraph provided for pro se applicants: An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

### ***Specification***

9. The amendment filed 3/26/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Claims 26 and 36 claim a,

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“means for adding random displacements to the location hypothesis at each time step for maintaining 3D target location hypotheses.” The applicant has pointed out a place in the specification that partially matches this claim when stating, “new hypotheses are created from the hypotheses as the previous time step  $t-dt$  by randomly selecting previous hypotheses...” This is not the same as what is claimed. Previous hypotheses are randomly selected, which is not the same as adding random displacements. If what is stated in the claim is supported somewhere else in the specification, the examiner will withdraw this objection.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Claim Objections***

10. Claims 17 and 27 are objected to because of the following informalities: claims 17 and 27 have odd wording that makes it difficult to interpret the claim. The claims state, “wherein the final target object location is given by the weighted mean of all location hypotheses of said 3D target location hypotheses for combining the measurements.” The addition of “for combining the measurements” is confusing, since it is placed in an odd space. It could read that the 3D target location hypotheses are there for combining the measurements, or it could read that any other of the objects in the line are for combining the measurements. It is also unclear as to what the measurements are; if they are the measured confidences of step e, or other measurements that are not mentioned in the claim that are combined, or if they are measurements in the claim that are combined but not previously mentioned as

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combined. Appropriate correction is required. The claim is given its best interpretation and is rejected below.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 26 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 26 and 36 contain claimed subject matter that does not match the specification, as explained above in the objection for the specification. If the applicant can point out a place in the specification where the wording is consistent/supported with the wording in the claim, the rejection will be withdrawn.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 17-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.



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15. Regarding claims 17 and 27, the phrase "examples...can" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). The statement of having something that "can" be included in the claim does not necessarily mean that it is part of the invention and does not add any limitation to the claims and isn't given any patentable weight.

16. Claims 17 and 27 recite the limitation "the final target object location" in lines 11 and 10, respectively. There is insufficient antecedent basis for this limitation in the claim.

17. Claims 17 and 27 recite the limitation "the weighted mean" in lines 11 and 10, respectively. There is insufficient antecedent basis for this limitation in the claim.

18. Claims 17 and 27 recite the limitation "the measurements" in lines 12 and 11, respectively. There is insufficient antecedent basis for this limitation in the claim.

19. Claims 19 and 29 recite the limitation "the target object location" in lines 4 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim. It is unclear if this is referring to the same final target object location as disclosed in claims 17 and 27.

20. Claims 19 and 29 recite the limitation "the confidences region" in lines 4 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.

21. Claims 19 and 29 recite the limitation "the central location" in lines 4 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.



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22. Claims 20 and 30 recite the limitation "the combination of the spread out images" in lines 5 and 6, respectively. There is insufficient antecedent basis for this limitation in the claim. It is unclear if that "the combination of the spread out images" is the same as "the combination of color and motion cues," but as it reads, it is different and there is no antecedent basis. Furthermore, "the spread out images" is not defined earlier in the claim either; only color and motion cues are spread out.

23. Claims 20 and 30 recite the limitation "the edges" in lines 6 and 7, respectively. There is insufficient antecedent basis for this limitation in the claim.

24. Claims 20 and 30 recite the limitation "the interior" in lines 7 and 8, respectively. There is insufficient antecedent basis for this limitation in the claim.

25. Claims 23 and 33 recite the limitation "the new hypotheses" in lines 4 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.

26. Claims 23 and 33 recite the limitation "the weights" in lines 4 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim. It is unclear if this corresponds to the weighted average or if this is another weight.

27. Claims 25 and 35 recite the limitation "the space" in lines 2 and 2, respectively. There is insufficient antecedent basis for this limitation in the claim.

28. The examiner would also like to suggest that the applicant amend the claims to read so that all "location hypotheses" that correspond to the "3D target location hypotheses" to read the same. The original claims read much clearer regarding the target location hypotheses because there is only one "target location hypotheses," the 3D target location hypotheses. With the added amendments, the claim is confusing

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because it mentions many variations of the same theme, and it is unclear if this is the same since sometimes the applicant adds a "the" in front, and sometimes the applicant does not. This can be seen in all of the steps of the independent claim, for instance:

- Step b: "3D target location hypotheses,"
- Step c : "each target location hypothesis" = step b's hypotheses?  
(could amend to read, "each of the 3D target location hypotheses")
- Step e "the hypotheses" = step b's hypotheses? = step c's hypotheses?
- Wherein statement: "all location hypotheses" = step b's? = step c's? = step e's?... etc.

This can be further seen in other dependent claims such as claims 19 and 29 where it states "the target object location," which should correspond to "the final target object location" of the independent claim, and would be clearer if amended to be consistent with the independent claim. Please look through claims and amend the terminology to be consistent. If a term is intentionally different, please amend these terms to clearly be different.

29. Regarding claims 18-20, 23, 28-30 and 33, the claims claim "means for projecting," "means for measuring overall confidence," "means for measuring said confidences," and "means for maintaining 3D target location." It is unclear if these means correspond to the means claimed in the corresponding independent claim.

30. Regarding claims 23 and 33, the claim claims 3D target location hypotheses without a "the" or "said" in front of it, as seen in "for maintaining 3D target location hypothesis by creating a set of 3D target location hypotheses..." By not including a "the" or a "said", this infers that the 3D target location hypotheses in claims 23 and 33 are different than those of claims 17 and 27, which the examiner infers is not the applicant's intentions. The same problem occurs in claims 24, 26, 34 and 36.

***Claim Rejections - 35 USC § 103***

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claims 17-36, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6999624 (Nelson) in view of U.S. Patent Application Publication No. 20010008561 (Paul et al), and further in view of U.S. Patent No. 5323470 (Kara et al).

Regarding claim 27, Nelson discloses an apparatus comprising: a) means for capturing the target object, the means that obtains the digital/ digitized image (fig. 1, item 100), b) means for maintaining a large number of 3D target location hypotheses, the preprocessing section (fig. 1, item 102) that maintains many locations in which the target can be found (fig. 2), c) means for projecting each target location hypothesis from 3D space to 2D image spaces of means for capturing the target object, done also by the preprocessing section (fig. 1, item 102), since the image obtained is a 2D image from the means for capturing the target object, obtained from a 3D space and thus projected into 2D by the means for capturing the target object, and all the location hypotheses are found as divided in fig. 2, d) means for measuring confidences about the presence of the target object in images captured by the means for capturing the target object (fig. 1, item 12) in which confidences/ scores are found in each window/ hypotheses (fig. 3,

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item 24) and e) means for combining the measured confidences of the hypotheses to obtain 3D location of the target object (fig. 3, item 38), since those with a high enough measured confidence are combined/ grouped to obtain the 3D location since the location is found using the 3D hypotheses stated above and also because the location is found of the 3D object, wherein the final target object location is given by the weighted mean of all location hypotheses of said 3D target location hypotheses for combining the measurements, since originally a weighted sum that is normalized (col. 2, lines 39-43), and thus a weighted mean is found in each window, and is thus used to give the final target location of all the hypotheses (col. 2, lines 64-69) and also used for combining the measurements (col. 3, lines 58-60).

Nelson does not disclose expressly that hypotheses are in areas that are guessed to have the object based on other information, thus narrowing the search area, and the means for capturing the target object has two or more imaging sensors.

Paul et al discloses that in an image, probable locations can be found to find the hypotheses (page 1, paragraph 10).

Nelson and Paul et al are combinable because they are from the same field of endeavor, i.e. image tracking.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have narrowed-down hypotheses.

The suggestion/motivation for doing so would have been to have a faster system by only processing areas of interest instead of processing the full image.

Nelson (as modified by Paul et al) does not disclose expressly that the means for capturing the target object has two or more imaging sensors.

Kara et al discloses that a means for capturing a target object has two imaging sensors, 2 CCD cameras shown in fig. 1.

Nelson (as modified by Paul et al) and Kara et al are combinable because they are from the same field of endeavor, i.e. image tracking.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have plural cameras.

The suggestion/motivation for doing so would have been to provide a more accurate system by providing many possible images, and to provide a faster system by providing multiple images at the same time

Therefore, it would have been obvious to combine the apparatus of Nelson with the hypotheses of Paul et al and the plural cameras of Kara et al to obtain the invention as specified in claim 27.

(It is reminded that the statement of having something that "can" be included in the claim does not necessarily mean that it is part of the invention and does not add any limitation to the claims and isn't given any patentable weight.)

33. Claim 17 is rejected for the same reasons as claim 27. Thus, the arguments analogous to that presented above for claim 27 are equally applicable to claim 17.

Claim 17 distinguishes from claim 27 only in that claim 17 is a method claim and claim 27 is an apparatus claim. Since an apparatus carries out a method, prior art applies.

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34. Regarding claim 28, Paul et al discloses projecting target locations, or predicting target locations, with projections that are obtained by calibrating said imaging sensors with respect to a reference coordinate system, the reference coordinate system being the system shown at the point of initialization, and where all future tracking is based on (page. 2, paragraph 0020).

35. Regarding claim 29, Nelson discloses that the apparatus further comprises means for measuring overall confidence of the target object location based on a combination of a plurality of confidence images (fig. 3, step 42), since the overall confidence is calculated based on a group image, the confidence images being the images that are scored in fig. 3, item 24, from each of the imaging sensors, since this is done for an image from a sensor, and thus for each sensor, wherein the target object location is given as the central location of the confidences region, interpreted as the combination region, since the target location is given as the full group including the central locations of the group (fig. 3, item 44).

36. Regarding claim 30, Nelson discloses that the means for measuring confidences measures confidences are based on color (col. 3, line 52- col. 4, line 5). Paul et al also discloses means for measuring confidences, the means that measures the probability of the target center and the probable location (page 2, paragraph 30), page 3, paragraph 39 and 40) and thus finding likely areas, based on a combination of color and motion cues in each of the images captured by said imaging sensors (page 1, paragraph 10), wherein the color and motion cues are spatially spread out using averaging, since the color cues are spread out using a weighted average, spreading out the applicable area

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to pixels in a given region (page 2, paragraph 30) and the motion cues being spatially spread out since the motion cues utilize the spatially spread out color cues (page 3, paragraph 39-40), before they are combined since the spreading out occurs before the motion and color cues are combined, and whereby the combination of the spread out images results in an image where a combined response is not only present at some of the edges of the target object but also contains strong responses in the interior of the target object, since the edges of the target are considered (page 2, paragraph 30), and the central area is defined (page 3, paragraph 40).

37. Regarding claim 31, Paul et al discloses means for calculating the color cues, or the colors that are detected as likely colors, using a color model of the target object, a reference (page 2, paragraph 27-28), wherein the color model of the target object is represented by something that is estimated by collecting color samples of the target object, since a reference is found by taking the ideal sample color of the target (page 2, paragraph 0020). Paul et al does not expressly disclose that the “something” that represents a color model is a histogram. Nelson discloses that a histogram can be used to represent color (col. 3, lines 60-66).

38. Regarding claim 32, Paul et al discloses that motion cues are calculated by measuring differences between images captured sequentially by said imaging sensors (page 3, paragraph 38).

39. Regarding claim 33, Paul et al discloses that 3D target location hypothesis are maintained by creating a set of 3D target location hypotheses at each time step, since at each time step, when detecting motion, Paul et al creates a new set of hypotheses



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based on the motion (page. 3, paragraph 36-38), wherein the weights, (being any weight since there is not antecedent basis, therefore, the weights can be the confidences) of the new hypotheses are given by said confidences, the calculations made for the highest probability (page 2, paragraph 30 and page 3, paragraph 40).

40. Regarding claim 34, Nelson discloses means for creating said 3D target location hypotheses, that which maintains the 3D target location hypotheses, as disclosed in the independent claim. Paul et al discloses that hypotheses can be based on known 3D target location hypotheses from a previous time step (page 3, paragraphs 36 and 38).

41. Regarding claim 35, Nelson discloses means for initially distributing the 3D target location hypotheses randomly in the space viewed by said imaging sensors by dividing the space into many block (fig. 2) and thus providing random 3D target location hypotheses based on no other previous knowledge of the target location.

42. Regarding claim 36, Nelson discloses means for adding random displacements to the location hypothesis at each time step for maintaining 3D target location hypotheses since Nelson shows many location hypotheses shown in fig. 2, and any random displacement can be added from any of the windows, and another window will be another 3D target location hypotheses.

43. Claims 18- 26 are rejected for the same reasons as claims 28-36. Thus, the arguments analogous to that presented above for claims 28-36 are equally applicable to claims 18-26. Claims 18-26 distinguish from claims 28-36 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

***Conclusion***

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

45. This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee.

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier. If the applicant should still desire to file an amendment and does not meet the above requirements, the applicant has the option to file for a request for continued examination.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen S. Yuan whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KY

5/10/2007



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SUPERVISORY PATENT EXAMINER